

We claim:

1. Apparatus for inhibiting the fouling of a submersible object, comprising:

a first coating disposed on a first surface of an object which is submersible,

5 said first coating comprising an electrically conductive polymer-based material;

an electrode; and

an electrical current source which is connectable in electrical communication

with said first coating and said electrode, said electrode being connectable in

electrical communication with said electric current source to form an electrical

10 circuit comprising said first coating, said electric current source, said electrode,

and water in which both said electrode and said first coating are disposed.

2. The apparatus of claim 1, wherein:

said electrically conductive polymer-based material comprises a

15 nonconductive polymer matrix with electrically conductive particles disposed

therein.

3. The apparatus of claim 2, wherein:

said electrode comprises a second coating, said second coating comprising

20 said nonconductive polymer matrix with electrically conductive particles disposed

therein.

4. The apparatus of claim 3, wherein:

said first and second coatings are attached to port and starboard portions of a

25 boat hull.

5. The apparatus of claim 2, wherein:

said nonconductive polymer matrix material is vinyl ester.

6. The apparatus of claim 2, wherein:

said conductive particles are graphite.

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7. The apparatus of claim 1, further comprising:

current flowing through said electrical circuit is periodically reversed, said first coating alternately acting as an anode and a cathode of said electrical circuit.

10 8. The apparatus of claim 2, wherein:

said matrix material is vinyl ester and said conductive particles are graphite.

9. The apparatus of claim 1, further comprising:

15 a boat hull comprising a fiberglass layer, a conductive layer, and an intermediate layer, said conductive layer comprising said first coating.

10. The apparatus of claim 3, further comprising:

20 a boat hull having a starboard side and a port side, said port side of said hull being at least partially covered by said first coating, said starboard side of said hull being at least partially covered by said second coating, said first and second coatings being electrically insulated from each other.

11. The apparatus of claim 10, wherein:

25 said boat hull having an inner fiberglass layer and an intermediate layer, said first coating being disposed on said port side of said intermediate layer, said second coating being disposed on said starboard side of said intermediate layer.

12. Apparatus for inhibiting the fouling of a submersible object, comprising:

a boat hull having a port side and a starboard side, said boat hull comprising a structural supporting layer;

a first coating layer disposed on said port side of said structural supporting layer, said first coating layer comprising a first material having a second material suspended within said first material, said second material being electrically conductive;

a second coating layer disposed on said starboard side of said structural supporting layer said second coating layer comprising said first material having said second material suspended within said first material, said first and second coating layers being electrically separated from each other;

a source of current connected in electrical communication with said first and second coating layers to sequentially cause an electrical current to flow in a direction from said source of current toward said first coating layer and subsequently to cause said electrical current to flow in a direction from said source of current toward said second coating layer.

13. The apparatus of claim 12, further comprising:

an intermediate layer disposed on said structural support layer, said first and second coating layers being disposed on said intermediate layer.

14. The apparatus of claim 13 , wherein:

said intermediate layer is a gel coat compound.

15. The apparatus of claim 14, wherein:

said first and second coating layers comprise graphite particles supported in a vinyl ester matrix.

16. The apparatus of claim 12, wherein:

said boat hull is constructed by disposing said first and second coating layers in a mold, disposing said intermediate layer over said first and second coating
5 layers, and subsequently disposing said structural support layer over said intermediate layer.

17. The apparatus of claim 16, wherein:

said first and second coating layers are disposed as a fluid into said mold.

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18. Apparatus for inhibiting the fouling of a submersible object, comprising:

a first coating disposed on a first surface of an object which is submersible, said first coating comprising a matrix compound material having conductive particles disposed therein;

15 an electrode;

an electrical current source which is connectable in electrical communication with said first coating and said electrode, said electrode being connectable in electrical communication with said electric current source to form an electrical circuit comprising said first coating, said electric current source, said electrode,
20 and water in which both said electrode and said first coating are disposed, said electrode comprising a second coating, said second coating also comprising said matrix compound material having said conductive particles disposed therein.

19. The apparatus of claim 18, wherein:

25 said matrix material is vinyl ester and said conductive particles are graphite, said first and second coatings being attached to port and starboard portions of a boat hull.

20. The apparatus of claim 19, further comprising:

current flowing through said electrical circuit is periodically reversed, said first coating alternately acting as an anode and a cathode of said electrical circuit,
5 said boat hull comprises a starboard side and a port side, said port side of said boat hull being at least partially covered by said first coating, said starboard side of said hull being at least partially covered by said second coating, said first and second coatings being electrically insulated from each other.